

SYNTROPY

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SYNTROPY

Yesid Vianchá
(Chemist, teacher and
scientific writer).

Translation and proofreading:
Arnulfo Tuñón-Ortiz
PhD Candidate, Williams Lab
Neuroscience Program
University of Utah

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I want to thank your cooperation, support, and trust in this dream. It is very satisfying to know that you follow our site on Facebook (@syntropyscience). If not, visit it and click "Like" to find more incredible short science stories. Also, you can share the posts with your family and friends, as well as debate and comment on my crazy ideas. That means you, like me, love science. Cheers.

"Science? What is it, after all, but a long
and systematic curiosity?"

André Mauro.

Equal and opposite on each other.

- Dragon, the helium purge is complete. Engines ready for takeoff. Do you authorize retracting the Orbiter Access Arm?
- Authorized.

Attention to all personnel, this is NTD conducting a launch status check. They are ready to resume count and go for launch.

- O.T.C.? -O.T.C. go!
- T.B.C.? – T.B.C. go!
- T.T.C.? – T.T.C. go!...
- Safety console?

Safety console is a go!...

Some minutes later.

- Dragon Launch's Director, our team is ready to proceed.
- Ok, so no constraints for launch...
- Negative, boss.
- Dragon, close and lock your devices and initiate O₂ flow. Turn on automatic control launch.
- Understood. Starting the main engine...

A few seconds later, the choppy echo of the explosion of liquids and solids, along with the white

cloud produced by the exhaust gases (chemical propulsion system), make the intestines of the two million kilo-beast creak. That is where I am.

In that dance hall , Uncle Marcos' memory comes to mind:

- Uncle, have you noticed that if you accelerate a little bit, the strange racket disappears?
- Yes. I know, but I can't go any faster. I guess something is blocking the road.

That was not the answer I wanted

to hear.

Knowing this, he would, from time to time, give an extra push to the accelerator, stoking the car a little, to reach the maximum speed of the engine. That action caused a shift in the vibrational frequency and the noise disappeared along with the shaking of my guts.

Even though I liked the effect, it didn't last long: as the engine revolutions returned to their normal condition, the many loose parts rediscovered their

tune (whether because of the other cars, the bumps on the road, or any clueless passerby). The machine was crying out for an inspection from the workshop.

Marcos was famous for his wheels. It was not because these cars were a symbol of modernity in the family, but of their reputation of being rescued from deterioration. He was quite a lover of mud and rust, from the tires and fenders to spark plugs. I remember, in particular, the radiator of "the shuttle" - an old Pontiac of '47 - which only ran

after its radiator left a generous 70 meters wake of steam.

In college, I came to understand what was going on with those cars. *"All objects have resonance frequencies, guys. From the yogurt you took out of the fridge at breakfast to the tallest building in the world. Every structure interacts in special ways with the waves originated from vibrations and, there are some frequencies at which they tend to vibrate more. It is called their resonant frequency, or their natural frequency. That is how springs, swings, musical instruments, atoms and, even your*

body works. For example, car designers should be careful that engine vibrations do not match the natural frequencies of the other components... Roberto, this is because resonance is the most efficient way to use energy: in that state, any minimum contribution would result in a very large impact, which means severe damage."

- 3, 2, 1...

Please, don't stop...! Don't stop quivering...! never stop shaking!

As the rockets burn, the fuel

reaches three thousand and three hundred degrees Celsius. By good fortune, transferring only eight Hertz onto my hips and shoulders. Which is good, as the frequency of these oscillating forces do not match the elastic structure of my brain, otherwise I would lose consciousness. Although—to tell you the truth—I haven't faced enough time in reduced gravity and, of course, in radiation exposure.

-Dragon, this is Control.

Newton's Third Law: It's a successful launch, gentlemen!... Ten seconds into the flight. The Role Program is completed: Trust Control System is at twenty-seven thousand kilometers per hour and the vector is in rotation, ongoing at 51.5 degrees, for an orbit of 136x36 Earth miles. Enjoy the trip, guys!

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